

REMARKS

Claims 1-15 are pending. Claims 1, 4, and 6-8 have been amended. New claims 9-15 have been added. No new matter has been introduced. Reexamination and reconsideration of the application are respectfully requested.

In the August 1, 2003 Office Action, the Examiner allowed claims 2, 3, and 5. These claims have been slightly amended for clarity. The Examiner objected to claim 6 because claim 6 should depend from claim 5 instead of claim 1. The Applicant has amended claim 6 to depend from claim 5. The Examiner rejected claims 1, 4, 7, and 8 under 35 U.S.C. §103(a) as being obvious over Tsuji et al., U.S. Patent No. 6,385,261 B1 (hereinafter the Tsuji reference), in view of Marks, U.S. Patent No. 5,373,460 (hereinafter the Marks reference). This rejection is respectfully traversed.

Amended independent claim 1 recites:

A background noise eliminating apparatus, comprising:

an envelope detector that detects an envelope of an **impulse response waveform** from a sample data sequence of the impulse response waveform **including background noise**;

a section detector that detects a section during which a slope of the envelope detected by said envelope detector equals a value in a predetermined range including "0" for at least a predetermined time;

a determining device that determines a background noise component value in accordance with sample data of the impulse response waveform during the section detected by said section detector; and

a background noise component eliminator that reduces an absolute value of the

sample data of the impulse response waveform by the background noise component value determined by said determining device.

The Examiner rejected claims 1, 4, 7, and 8 under 35 U.S.C. §103(a) as being obvious over the Tsuji reference in view of the Marks reference. The Tsuji reference does not disclose, teach, or suggest the background noise eliminating apparatus specified in independent claim 1, as amended. Unlike the background noise eliminating apparatus specified in independent claim 1, the Tsuji reference does not show “an envelope detector that detects an envelope of **an impulse response waveform** from a sample data sequence of the impulse response waveform **including background noise**”.

The Tsuji reference discloses an impulse noise detector that detects **pulsating impulse noise** by comparing it with a predetermined threshold value and removes it. The Tsuji reference states “since the **high-pass filter 9a attenuates all of the signal frequencies normally present in the FM composite signal**, the output of the high-pass filter 9a is **essentially a noise signal**” Column 3, lines 50-54. The Tsuji reference further states “the envelope detector 16 determines the amplitude level of the output of the high-pass filter 9a.” Column 3, lines 56-57. The Tsuji reference teaches that the high-pass filter 9a attenuates all of the signal frequencies normally present in the FM composite signal and that the envelope detector detects the output of the high pass-pass filter which is essentially a noise signal. The Tsuji reference does not disclose “an envelope detector that detects an envelope of **an impulse response waveform** from a sample data sequence of the impulse response waveform **including background noise**”.

The Marks reference does not make up for the deficiencies of the Tsuji reference. Specifically, the Marks reference does not show “an envelope detector that detects an envelope of an impulse response waveform from a sample data sequence of the impulse response waveform including background noise”.

Accordingly, Applicant respectfully submits that independent claim 1, as amended, distinguishes over the above-cited references. Claim 3 depends directly from independent claim 1, as amended. Therefore, Applicant respectfully submits that claim 3 distinguishes over the above-cited references for the same reasons as set forth above with respect to independent claim 1, as amended.

Independent claims 4, 7, and 8 recite limitations similar to independent claim 1, as amended. Therefore, Applicant respectfully submits that claims 4, 7, and 8 distinguish over the above-cited references for the same reasons as set forth above with respect to independent claim 1, as amended.

Applicant has added new claims 9-15 to further define the invention. New claims 9-15 recite limitations similar to independent claim 1, as amended. Therefore, Applicant respectfully submits that new claims 9-15 distinguish over the above-cited references for the same reasons as set forth above with respect to independent claim 1, as amended.

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Applicant believes that the foregoing amendment and remarks place the application in condition for allowance, and a favorable action is respectfully requested.

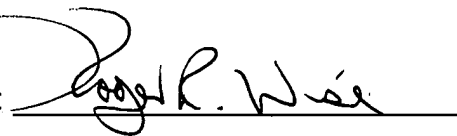
If for any reason the Examiner finds the application other than in condition for allowance, the Examiner is requested to call the undersigned attorney at the Los Angeles telephone number (213) 488-7100 to discuss the steps necessary for placing the application in condition for allowance should the examiner believe that such a telephone conference would advance prosecution of the application.

Respectfully submitted,

PILLSBURY WINTHROP LLP

Date: December 1, 2003

By:

A handwritten signature in black ink, appearing to read "Roger R. Wise", is written over a horizontal line.

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